The Gulf Coast Rumbler

National Weather Service
Mobile/Pensacola
8400 Airport Blvd. Bldg #11
Mobile, Alabama 36608

Phone: 251-633-6443
Fax: 251-607-9773

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Inside this issue:

Meet Your Weatherman, Dave McShane

Hello! I am Dave McShane, the Meteorologist-in-Charge (MIC) at the National Weather Service (NWS) Weather Forecast Office in Mobile. Welcome to the first issue of the newsletter from your Forecast Office. In each issue, we will use this space to profile an individual who is active in the field of meteorology.

My interest in meteorology began in 1958 when I saw the aftermath of a tornado near Topeka, KS. I was awed by the sight of a drinking straw imbedded into the trunk of a tree with no other damage present. While attending High School in Grand Forks, ND in the late '60s we experienced a near 100 degree temperature swing from about -35 degrees F to approximately 60 degrees F within 24 hours and then back to -20 F some 24 hours later. I thought, "How could that be?" in both cases, and so began my interest in the atmospheric sciences.

(continued page 2)

A Winter Wonderland on the Northern Gulf Coast

Jason Beaman, Senior Forecaster

While snow is certainly not unheard of along the northern Gulf Coast, it is a rare event. That is what made February 12th, 2010 so special for so many southerners. Not only did many people see snow, they saw a lot of it! The timing of the weather systems was just right. A couple of days prior to February 12th, a large area of high pressure built into the region from the north, delivering a shot of arctic air. Meanwhile, a strong disturbance moved ashore the coast of southern California and steadily moved east. (continued page 2)

Dave McShane

"It is truly a privilege for me to be associated with such an outstanding group of people here at the Weather Forecast Office Mobile/ Pensacola"

My path to a weather career was far from direct. I served in the United States Navy for some 22 years as an submarine electronics technician, submarine officer, then command of two units as an Oceanographer and Meteorologist prior to retiring in the early 90s. During my military time I obtained a B.S. in Mathematics/ Engineering (Auburn University), an MBA (National University), and an M.S. in Meteorology and Physical Oceanography (Naval Postgraduate School). Following military service I worked as a Physical Oceanographer, and High School Teacher before returning to meteorology at NOAA's National Data Buoy Center as the Voluntary Observing Ship Program Manager in early 2000. In 2004 I moved to the Weather Service Office (WSO) Williston, ND as MIC, followed by the MIC position in Grand Forks, ND before returning to southern AL as MIC Mobile/Pensacola.

It is truly a privilege for me to be associated with such an outstanding group of people here at the Weather Forecast Office Mobile/Pensacola. Every day we look forward to the opportunities the weather brings to set even higher standards.

Winter Weather

"A few areas across southern Conecuh County in Alabama reported an impressive 6 to 7 inches"

Snow covered yard in Citronelle, Alabama

As it did so, an area of low pressure developed over the Gulf of Mexico and tracked a couple hundred miles south of the coast. The low tracked along just the right path to keep the cold air in place across the area while an abundance of moisture streamed in. The result was a widespread 3 to 5 inches of snow across interior portions of southeast Mississippi and southwest and south central Alabama. A few areas across southern Conecuh County in Alabama reported an impressive 6 to 7 inches. The official cooperative observing station in Evergreen, AL reported 5 inches of snow. Taking a look back at historical observations from the site indicates this is tied for the second heaviest one day snowfall, with February 12th, 1899 and February 15, 1895 also recording 5 inches. The record one day snowfall for Evergreen is 6 inches which occurred during the Superstorm of March 13th, 1993.

Unfortunately, those anxiously waiting for significant snow just to the south along the Interstate 10 corridor were disappointed. Only 0.3 inches of snow was recorded at Mobile Regional Airport with just trace amounts further east across central Baldwin County into much of the Florida Panhandle. Forecasters were aware that there was going to be a sharp

Winter Weather

cutoff in accumulations and that happened to set up right along I-10. The track of the low pressure system was just close enough to the coast to allow warmer air to surge in around 5,000 feet above the ground.

This prolonged the period of rain over the area and by the time the colder air arrived, the heaviest of the precipitation was exiting. If the low had tracked just 20 miles or so further south, then the Mobile metro eastward to the Eastern Shore of Baldwin County would have likely received significant snow accumulation. In fact, all Mobilians had to do was drive up Highway 45 to Citronelle to see several inches of snow. It

was that close! So when will Mobile see its next chance for snow? While that cannot be answered directly, historical records and research show that measurable snow (0.1 inches or greater) has only occurred 20 times in 129 years. In fact, even though Mobile only measured a small amount of snow on February 12th,

it was the first measurable snow since 0.1 inches was measured on February 22, 1998. Perhaps you are also wondering when will be the next chance at seeing enough snow to build a snowman. Well, the probability for any given year of seeing 1 inch or more of snow is only 11%. The yearly probability of 3 inches of snow or greater is a meager 5%. These numbers certainly put the winter storm of February 12th, 2010 in perspective. It was a memorable storm which very rarely occurs along the northern Gulf Coast.

Florida welcome sign along the northern portion of the Florida Panhandle.

Photo: Courtesy of Ryan Rosen

"Well, the probability for any given year of seeing 1 inch or more of snow is only 11%."

Snow covered yard in Citronelle, Alabama

Photos courtesy of Don Shepherd

Photo shows a Cotton Region Shelter which is used to house the liquid-in-glass thermometers.

The shelter is painted white to reflect sunlight and has vents on all four sides for improved ventilation.

"The COOP observers are people who volunteer their time each day to report their daily weather data to the National Weather Service"

MMTS is replacing the Liquid-in-glass Thermometers used in the Cotton Region Shelters.

What is the COOP Program?

Kirk Caceres, Meteorologist

The primary purpose of COOP is to collect data. The National Weather Service (NWS) Cooperative Observer Program (COOP) was created by the United States Congress in 1890 under the Organic Act. The Organic Act charged the National Weather Service with providing observational meteorological data, usually consisting of daily maximum and minimum temperatures, snowfall, and 24-hour precipitation totals. It mandated the distribution of the data for agricultural and commercial use, and established the recording of the climatic conditions of the United States. The Organic Act also required the National Weather Service to forecast the weather, issue storm warnings, and to measure and forecast river information.

You may be thinking "Who are COOP observers"? The COOP observers are people who volunteer their time each day to report their daily weather data to the National Weather Service. These volunteers include: Agricultural interests, Federal, State, and Local government offices, along with the public, and countless others. The COOP data is sent to the local National Weather Service office to be quality controlled. Once the COOP data has been reviewed, the data is then sent to the National Climatic Data Center (NCDC) in Asheville, North Carolina to be archived. The data then can be obtained by the public for many different uses including weather related insurance claims, local agricultural information, local climate history, energy management, and for the construction and architectural industries.

The first known systematic weather observations in the United States were recorded by Reverend John Campanius Holm in 1644. Thomas Jefferson envisioned an all volunteer observing network back in 1776, and today there are over 10,000 COOP stations nationwide. The National Weather Service in Mobile has 30 active Cooperative Observers in our county warning area. Also, our office has recently completed a rainfall equipment modernization of the recording rain gauges, known as the "Fisher Porter Rebuild". If you are interested in becoming a Cooperative Weather Observer for the National Weather Service or want more information, contact the Observing Program Leader (OPL), Gene Jacobi at (251) 633-6443.

The 8-inch Standard Rain Gauge is used by the National Weather Service is of a standardized design used throughout the world for official rainfall measurements.

Hail Criteria for Severe Thunderstorm Warnings Increased

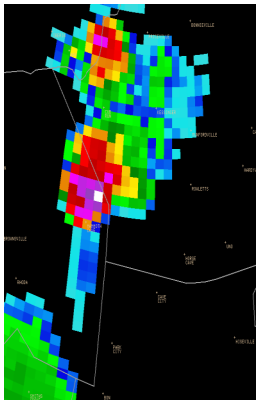
Jeff Garmon, Warning Coordination Meteorologist

For decades, the National Weather Service has issued severe thunderstorm warnings whenever a thunderstorm was forecast to produce wind gusts of 58 mph or greater, and/or hail 3/4ths of an inch in diameter or larger. Based upon research and testing in the central areas of the United States, the National Weather Service made a decision to change the hail criteria for issuing severe thunderstorm warnings last year. Effective January 5, 2010, the minimum size for severe hail nation-wide was increased to one inch in diameter. There will not be a change to the wind gust criterion of 58 mph.

This change is based on research indicating significant damage does not occur until hail size reaches one inch in diameter (roughly the size of a quarter), and as a response to requests by core partners in emergency management and the broadcast news media. The National Weather Service realized the frequency of severe thunderstorm warnings issued for penny-size and nickel size hail might have desensitized the public to take protective action during a severe thunderstorm warning.

In areas of the central United States that experimented with changing to the one inch hail criterion during 2009, media partners stated their user feedback suggests warnings are now more meaningful. In addition, television networks receive fewer viewer complaints from breaking into programming for non-damaging storms. The emergency management community in those areas agreed that warnings carry more weight, and spotters now concentrate on the more significant events.

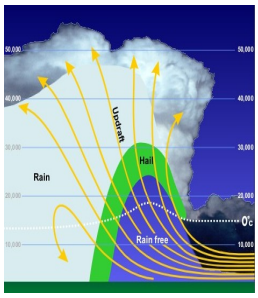
Figure: The minimum size hail criterion for severe thunderstorms changes from 3/4 inch (penny-size) to 1 inch (quarter-size) nationwide on January 5, 2010.



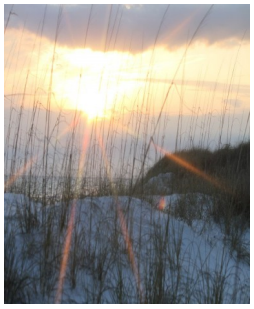
Three Body Scatter Spike near Mammoth Cave, Kentucky on June 2005.

Photo courtesy of NWS Louisville, KY

"Effective January 5, 2010, the minimum size for severe hail nation-wide was increased to one inch in diameter."



The diagram shows how hail develops in a thunderstorm.

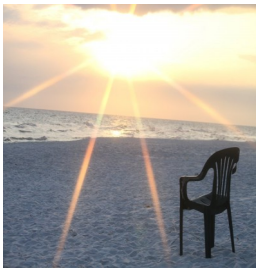


Sunset at the beach.

Photo courtesy of John Werner.

"Rip Currents do NOT pull a swimmer under the water"

"Most rip currents typically form along the beach at breaks in the offshore sandbar, but they also form near structures such as jetties and piers"



Spring afternoon on the beach.

Photo courtesy of John Werner.

Rip Currents

Don Shepherd, Senior Forecaster

What is a Rip Current?

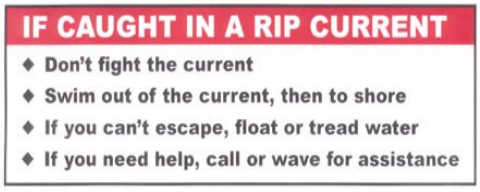
A Rip Current, erroneously called a rip tide or undertow, is a channelized current of water flowing away from the shore at beaches. Most rip currents typically form along the beach at breaks in the offshore sandbar, but they also form near structures such as jetties and piers. Rip Currents form when water, piled against the shore, begins to return to deeper water. Typically, onshore winds and waves push water over the offshore sandbar, allowing excess water to collect between the bar and the beach. Eventually, this excess water starts to return seaward through low spots in the sandbar, "ripping" an opening. Near the beach, rip currents are usually narrow, increasing in width as they extend farther offshore. Some rip currents last only a few minutes to a few hours, while others may last for days. Weather or ocean conditions can cause rip currents to be stronger and more frequent on some days than on others.

Telltale signs of rip currents

If you are observant while you are at the beach, you can sometimes see the signs that indicate a Rip Current is present. A visible channel of churning, choppy water; a narrow channel where there is a difference in water color; a line of seaward moving foam; an offshore area of murky water; or a break in the incoming wave pattern are all indicators of possible rip currents.

Why are rip currents Dangerous?

Rip Currents are dangerous because they can pull unprepared swimmers away from shore and into deeper waters.



"Swim either to your LEFT or RIGHT to escape the current"

Rip Currents

Rip Currents do NOT pull a swimmer under the water, but do become dangerous when swimmers panic and struggle against the current while being pulled farther and farther away from the beach.

Rip Currents can move at speeds up to 5 mph, which is faster than an Olympic swimmer! At these speeds, the force of a rip current is too strong for even the strongest of swimmers, and attempts to swim directly back toward shore against the current can be fatal, especially for the panicked or tired swimmer. In fact, rip currents claim more lives along the Gulf Coast beaches each year than do hurricanes, tornadoes and lightning combined.

What you need to know

When you take a trip to the beach, there are a few things that you can do to protect yourself from the dangers of rip currents.

You should swim at beaches with lifeguards, if possible. When you arrive at the beach, ask the lifeguard about the current rip current risk. Also note any flag warning system that may be present.

If you find yourself caught in a rip current, DON'T panic and DON'T swim against the outgoing current. Doing either of these could cost you your life. Since most rip currents are relatively narrow, you should swim in a direction parallel to the shoreline to escape the outgoing current. More simply, if caught in a rip current, and facing back toward the beach, swim either to your LEFT or RIGHT to escape the current. Just remembering the simple phrase "Don't Fight...Swim Left or Right" could save your life. Once free of the outgoing current, swim at an angle back to the beach.

For more information about rip currents?

Before you leave for a trip to the beach, check the latest National Weather Service forecast for local beach conditions. The National Weather Service in Mobile issues a Surf Zone Forecast daily from March 1st to October 30th. This product includes the expected rip current risk along the Alabama and northwest Florida beaches over the next couple of days. More rip current information can be found at the following website: **www.ripcurrents.noaa.gov.**

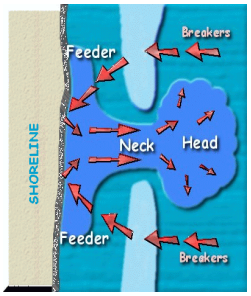
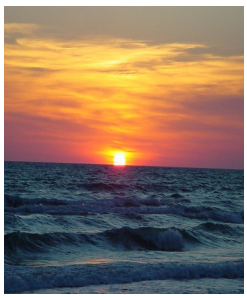


Diagram showing a rip current along the coast.

The Beach Warning Flags may vary slightly from location to location.

"Don't Fight...Swim Left or Right... Once free of the outgoing current, swim at an angle back to the beach"



Sunset on the beach.

Photo courtesy of Don Shepherd.

River Flooding in Brewton, Alabama December 2009.

Photo courtesy of the Alabama Forestry Commission.

"A record 31.91 inches of rain fell in Mobile from December through February"

Winter Climate Summary

Jack Cullen, Forecaster

The winter of 2009-10 has been one of the coldest and wettest ever recorded along the Gulf Coast. An enhanced southern jet stream due to El Nino served to bring several heavy rain events to the area during the winter. A record 31.91 inches of rain fell in Mobile from December through February. This broke the previous wettest Winter record of 25.95 inches that was set back in 1983. This amount was 16.40 inches above normal. December was the wettest on record and January was the 6th wettest on record.

This was also the 4th coldest Winter on record in Mobile. The average temperature was 47.4 degrees which was 4.6 degrees below normal. The coldest Winter on record occurred back in 1978 when the average temperature was 45.7 degrees.

Pensacola recorded its 2nd wettest Winter as 25.85 inches of rain fell. This was 11.86 inches above normal. This amount was second only 1936 when 28.88 inches fell.

This was also the 4th coldest Winter on record in Pensacola. The average temperature was 48.4 degrees which was 5.3 degrees below normal. The coldest Winter on record occurred back in 1977 when the average temperature was 47.4 degrees.

The new Fischer – Porter recording rain gauge after upgrade.

The FPR will weigh rainfall by an electronic pressure sensor instead of the complicated weighting system of springs and cables.

FPR Installation Completed

Gene Jacobi, Observation Program Leader

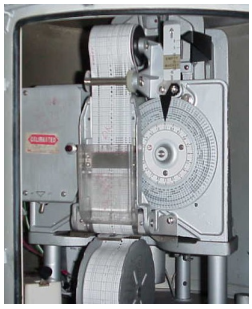
During January and early February, the COOP Program in the Mobile CWA took a technological leap forward with the upgrade of the Fischer-Porter Recording Rain Gauges at ten sites across Southeast Mississippi, Southwest and South Central Alabama, and the Western Florida Panhandle. Prior to this upgrade, rainfall was measured by a complicated weighing system of springs and cables, the data was recorded on a paper tape every 15 minutes by a punch mechanism, and the tape was removed and sent to the Weather Forecast Office at the end of each month, and then forwarded to the National Climatic Data Center where the tape was read by a machine. With the new FPR-D (Fischer-Porter Rebuild), the rainfall is weighed by an electronic pressure sensor; 15 minute rainfall data is stored on a digital data logger, and the data is downloaded at the end of each month to a memory card which is

FPR Installation

sent to the Forecast Office for reading. The data from the memory card is sent electronically to the National Climatic Data Center for processing and filing.

This equipment modification changes the way the precipitation measurement is taken, but there will be no change in the quality or timeliness of the data.

The ten COOP stations in the Mobile CWA receiving the upgrade were: Wiggins Ranger Station and Leakesville in Mississippi. Alberta, Andalusia, Atmore, Dauphin Island, Greenville, Jackson, and Thomasville in Alabama. Niceville in Florida.



The photo shows the Fischer - Porter recording rain gauge before the upgrade.

This type of rain gauge is being replaced by the FPR.

All Hazards NOAA Weather Radio

Kirk Caceres, Meteorologist

Spring is here and so will be the risk of strong to severe thunderstorms across the Gulf Coast. When dangerous weather is threatening the area and you are away from your television and internet access, you can depend on the All Hazards National Oceanic and Atmospheric Administration (NOAA) Weather Radio, the official "voice of the National Weather Service". All Hazards NOAA Weather Radio (NWR) is the most direct link to NWS information. The NWR system in place across the country provides the public with a convenient and rapid means of receiving weather forecasts, weather warnings, and other weather information. This information is broadcast on NWR 24 hours a day, seven days a week.

Weather radios can be purchased at many stores at affordable prices and some AM/FM radios have "weather bands" to receive NWR broadcast. Look for a radio with an alert mode, one that has backup battery power, and one that has the capability of receiving all seven NWR broadcast frequencies.

Most weather radios sold today have a feature known as Specific Area Message Encoder (SAME). This feature will allow you to have the radio alarm warnings for only those counties that you specify. Once you have the number, follow the directions supplied by the manufacturer of your NWR SAME receiver for programming.

Refer to the following website for additional FIPS codes:

http://www.nws.noaa.gov/nwr/indexnw.htm#sametable

"All Hazards NOAA Weather Radio (NWR) is the most direct link to the NWS information"

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NOAA's National Weather Service

National Weather Service
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8400 Airport Blvd. Bldg #11
Mobile, Alabama 36608

Phone: 251-633-6443
Fax: 251-607-9773
E-mail:
Kirk.Caceres@noaa.gov

To Report Severe Weather 1(800) 633-6772

Questions? Comments?

Kirk Caceres
Kirk.Caceres@noaa.gov

Meteorologist-In-Charge
Dave McShane
David.Mcshane@noaa.gov

Webmaster
sr-mob.webmaster@noaa.gov

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Editor:
Kirk Caceres

Assistant Editor:
Jason Beaman

Other Contributors:
Dave McShane
Jeff Garmon
Gene Jacobi
Jack Cullen
Don Shepherd
John Werner

NOAA NWR Area Listings		
KEC-61	Near Mobile, AL	162.550 MHz
KEC-86	Milton, FL	162.400 MHz
KIH-59	Dozier, AL	162.550 MHz
WNG-607	Greenville, AL	162.425 MHz
WNG-640	Leakesville, MS	162.425 MHz
WNG-646	Brewton, AL	162.475 MHz
WWF-55	Jackson, AL	162.500 MHz

NWR Radio

The National Weather Service Office in Mobile, Alabama operates 7 NWR transmitter sites which serve portions of Southeast Mississippi, Southwest Alabama, Northwest Florida Panhandle, and the Adjacent Coastal Waters. A test of the alarm is performed each Wednesday between 9 am and 10 am and between 6 pm and 8 pm, unless severe weather is threatening the area. If the test is postponed, it will be done on the next good weather day. The Mobile, Pensacola, Jackson, and Dozier NWR stations will broadcast the Local and Extended Forecast every half hour and the Coastal Waters Forecast will air every 15 minutes.